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DATE: Saturday, August 14, 2004

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<input type="checkbox"/>	L25	L24 and (sensor or senser or detect\$4 or receiv\$4 or reception)	17
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		I2 and ((reduced or partial\$2 or limit\$3 or restrict\$3 or reduction or incomplet\$3 or undersampl\$3 or under-sampl\$3 or "under sampl\$3") with (field-of-view or FOV or "field of view" or region-of-interest or ROI or "region of interest" or "region of investigation" or region-of-investigation))	
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<input type="checkbox"/>	L11	L10 and (imag\$4)	8
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		L5 and ((reduced or partial\$2 or limit\$3 or restrict\$3 or reduction or	

	incomplet\$3 or undersampl\$3 or under-sampl\$3 or "under sampl\$3") with L6 (field-of-view or FOV or "field of view" or region-of-interest or ROI or "region of interest" or "region of investigation" or region-of-investigation)	17
	L5 L4 and (field-of-view or FOV or "field of view" or region-of-interest or ROI or "region of interest" or "region of investigation" or region-of-investigation)	109
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	L3 L2 and (matrix or array)	968
	L2 L1 and (navigat\$4)	1758
	L1 ((magnetic adj resonance) or MRI or NMR)	185066

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### Search Results - Record(s) 1 through 8 of 8 returned.

1. Document ID: US 20040039276 A1

Using default format because multiple data bases are involved.

L12: Entry 1 of 8

File: PGPB

Feb 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040039276

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040039276 A1

TITLE: Magnetic resonance imaging apparatus

PUBLICATION-DATE: February 26, 2004

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ikezaki, Yoshikazu	Tokyo		JP	

US-CL-CURRENT: 600/407

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [None](#) | [Drawn Ds](#)

2. Document ID: US 6741880 B1

L12: Entry 2 of 8

File: USPT

May 25, 2004

US-PAT-NO: 6741880

DOCUMENT-IDENTIFIER: US 6741880 B1

TITLE: Method and apparatus for efficient stenosis identification and assessment using MR imaging

DATE-ISSUED: May 25, 2004

#### INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		
Saranathan; Manojkumar	Rockville	MD		

US-CL-CURRENT: 600/419; 324/300, 324/307, 382/128, 600/407, 600/410, 600/420

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [None](#) | [Drawn Ds](#)

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**3. Document ID: US 6408201 B1**

L12: Entry 3 of 8

File: USPT

Jun 18, 2002

US-PAT-NO: 6408201

DOCUMENT-IDENTIFIER: US 6408201 B1

TITLE: Method and apparatus for efficient stenosis identification in peripheral arterial vasculature using MR imaging

DATE-ISSUED: June 18, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		

US-CL-CURRENT: 600/410; 324/300, 324/307, 382/128, 600/419, 600/420[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Figure](#) | [Table](#) | [Claims](#) | [KMC](#) | [Drawn D](#)

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**4. Document ID: US 6289232 B1**

L12: Entry 4 of 8

File: USPT

Sep 11, 2001

US-PAT-NO: 6289232

DOCUMENT-IDENTIFIER: US 6289232 B1

TITLE: Coil array autocalibration MR imaging

DATE-ISSUED: September 11, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jakob; Peter M.	Brookline Village	MA		
Sodickson; Daniel K.	Cambridge	MA		
Griswold; Mark	Brookline	MA		

US-CL-CURRENT: 600/410; 324/307, 324/309, 324/318, 324/322, 600/422[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Figure](#) | [Table](#) | [Claims](#) | [KMC](#) | [Drawn D](#)

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**5. Document ID: US 6178346 B1**

L12: Entry 5 of 8

File: USPT

Jan 23, 2001

US-PAT-NO: 6178346

DOCUMENT-IDENTIFIER: US 6178346 B1

TITLE: Infrared endoscopic imaging in a liquid with suspended particles: method and apparatus

DATE-ISSUED: January 23, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Amundson; David C.	Boulder	CO	80302	
Hanlin; H. John	Louisville	CO	80027	

US-CL-CURRENT: 600/473; 348/77, 600/160, 600/342

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Draw](#) | [D](#)

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6. Document ID: US 5910728 A

L12: Entry 6 of 8

File: USPT

Jun 8, 1999

US-PAT-NO: 5910728

DOCUMENT-IDENTIFIER: US 5910728 A

TITLE: Simultaneous acquisition of spatial harmonics (SMASH): ultra-fast imaging with radiofrequency coil arrays

DATE-ISSUED: June 8, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sodickson; Daniel Kevin	Cambridge	MA		

US-CL-CURRENT: 324/309

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Draw](#) | [D](#)

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7. Document ID: EP 1391746 A2

L12: Entry 7 of 8

File: EPAB

Feb 25, 2004

PUB-NO: EP001391746A2

DOCUMENT-IDENTIFIER: EP 1391746 A2

TITLE: Parallel magnetic resonance imaging using navigator echos

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Draw](#) | [D](#)

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8. Document ID: CN 1487305 A, EP 1391746 A2, US 20040039276 A1, JP 2004073538 A, KR 2004017777 A

L12: Entry 8 of 8

File: DWPI

Apr 7, 2004

DERWENT-ACC-NO: 2004-182325

DERWENT-WEEK: 200441  
COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Magnetic resonance imaging (MRI) apparatus for parallel imaging of subject has post-image producing device, which forms image with full field-of-view based on produced intermediate image and phase-corrected sensitivity matrix

[ Full ] [ Title ]

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Search Results - Record(s) 1 through 8 of 8 returned.

1. Document ID: US 20040039276 A1

Using default format because multiple data bases are involved.

L13: Entry 1 of 8

File: PGPB

Feb 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040039276

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040039276 A1

TITLE: Magnetic resonance imaging apparatus

PUBLICATION-DATE: February 26, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ikezaki, Yoshikazu	Tokyo		JP	

US-CL-CURRENT: 600/407

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [Name](#) | [Drawings](#)

2. Document ID: US 6741880 B1

L13: Entry 2 of 8

File: USPT

May 25, 2004

US-PAT-NO: 6741880

DOCUMENT-IDENTIFIER: US 6741880 B1

TITLE: Method and apparatus for efficient stenosis identification and assessment using MR imaging

DATE-ISSUED: May 25, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		
Saranathan; Manojkumar	Rockville	MD		

US-CL-CURRENT: 600/419; 324/300, 324/307, 382/128, 600/407, 600/410, 600/420

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [Name](#) | [Drawings](#)

**BEST AVAILABLE COPY** 3. Document ID: US 6408201 B1

L13: Entry 3 of 8

File: USPT

Jun 18, 2002

US-PAT-NO: 6408201

DOCUMENT-IDENTIFIER: US 6408201 B1

TITLE: Method and apparatus for efficient stenosis identification in peripheral arterial vasculature using MR imaging

DATE-ISSUED: June 18, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		

US-CL-CURRENT: 600/410; 324/300, 324/307, 382/128, 600/419, 600/420 Full |  Title |  Citation |  Front |  Review |  Classification |  Date |  Reference |  Drawings |  Claims |  KWMC |  Drawn D 4. Document ID: US 6289232 B1

L13: Entry 4 of 8

File: USPT

Sep 11, 2001

US-PAT-NO: 6289232

DOCUMENT-IDENTIFIER: US 6289232 B1

TITLE: Coil array autocalibration MR imaging

DATE-ISSUED: September 11, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jakob; Peter M.	Brookline Village	MA		
Sodickson; Daniel K.	Cambridge	MA		
Griswold; Mark	Brookline	MA		

US-CL-CURRENT: 600/410; 324/307, 324/309, 324/318, 324/322, 600/422 Full |  Title |  Citation |  Front |  Review |  Classification |  Date |  Reference |  Drawings |  Claims |  KWMC |  Drawn D 5. Document ID: US 6178346 B1

L13: Entry 5 of 8

File: USPT

Jan 23, 2001

US-PAT-NO: 6178346

DOCUMENT-IDENTIFIER: US 6178346 B1



DERWENT-WEEK: 200441  
COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Magnetic resonance imaging (MRI) apparatus for parallel imaging of subject has post-image producing device, which forms image with full field-of-view based on produced intermediate image and phase-corrected sensitivity matrix

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Term	Documents
FULL\$2	0
FULL	1489177
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FULLAB	1
FULLAD	1
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FULLAO	1
(L12 AND (FULL\$2 OR ENTIRE\$2 OR COMPLET\$3)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	8

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1. Document ID: US 6675034 B2

Using default format because multiple data bases are involved.

L15: Entry 1 of 6

File: USPT

Jan 6, 2004

US-PAT-NO: 6675034

DOCUMENT-IDENTIFIER: US 6675034 B2

TITLE: Magnetic resonance imaging using direct, continuous real-time imaging for motion compensation

DATE-ISSUED: January 6, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sussman; Marshall S.	Toronto			CA
Wright; Graham A.	Toronto			CA
Cunningham; Charles H.	Toronto			CA

US-CL-CURRENT: 600/410

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	None	Drawn
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2. Document ID: US 6667618 B2

L15: Entry 2 of 6

File: USPT

Dec 23, 2003

US-PAT-NO: 6667618

DOCUMENT-IDENTIFIER: US 6667618 B2

TITLE: Method for the operation of a magnetic resonance apparatus, whereby positional changes are acquired with orbital navigator echos

DATE-ISSUED: December 23, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Thesen; Stefan	Meckenheim			DE

US-CL-CURRENT: 324/309; 324/307

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	None	Drawn
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**3. Document ID: US 6552540 B2**

L15: Entry 3 of 6

File: USPT

Apr 22, 2003

US-PAT-NO: 6552540  
DOCUMENT-IDENTIFIER: US 6552540 B2

TITLE: Magnetic resonance method for forming a fast dynamic image

DATE-ISSUED: April 22, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fuderer; Miha	Eindhoven			NL

US-CL-CURRENT: 324/309

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KIMC](#) | [Drawn Ds](#)

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**4. Document ID: US 6407549 B1**

L15: Entry 4 of 6

File: USPT

Jun 18, 2002

US-PAT-NO: 6407549  
DOCUMENT-IDENTIFIER: US 6407549 B1

TITLE: Magnetic resonance signal acquiring method and apparatus, recording medium and magnetic resonance imaging apparatus

DATE-ISSUED: June 18, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Uetake; Nozomu	Tokyo			JP
Kosugi; Susumu	Tokyo			JP

US-CL-CURRENT: 324/307; 324/309, 324/322

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KIMC](#) | [Drawn Ds](#)

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**5. Document ID: US 6289232 B1**

L15: Entry 5 of 6

File: USPT

Sep 11, 2001

US-PAT-NO: 6289232  
DOCUMENT-IDENTIFIER: US 6289232 B1

TITLE: Coil array autocalibration MR imaging

DATE-ISSUED: September 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jakob; Peter M.	Brookline Village	MA		
Sodickson; Daniel K.	Cambridge	MA		
Griswold; Mark	Brookline	MA		

US-CL-CURRENT: 600/410; 324/307, 324/309, 324/318, 324/322, 600/422

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Draw](#) | [D](#)

6. Document ID: US 5910728 A

L15: Entry 6 of 6

File: USPT

Jun 8, 1999

US-PAT-NO: 5910728

DOCUMENT-IDENTIFIER: US 5910728 A

TITLE: Simultaneous acquisition of spatial harmonics (SMASH): ultra-fast imaging with radiofrequency coil arrays

DATE-ISSUED: June 8, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sodickson; Daniel Kevin	Cambridge	MA		

US-CL-CURRENT: 324/309

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Draw](#) | [D](#)

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NAVIGAT	175
NAVIGATA	1
NAVIGATABLE	59
NAVIGATAION	1
NAVIGATBD	1
NAVIGATBR	5
NAVIGATC	2
NAVIGATDON	1
NAVIGATE	17529

NAVIGATED	4403
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L15: Entry 5 of 6

File: USPT

Sep 11, 2001

DOCUMENT-IDENTIFIER: US 6289232 B1

TITLE: Coil array autocalibration MR imaging

Brief Summary Text (6):

Often, however, there is a tradeoff between spatial resolution and imaging time, since higher resolution images require a longer acquisition time. This balance between spatial and temporal resolution is particularly important in cardiac MR, where fine details of coronary artery anatomy, for example, must be discerned on the surface of a rapidly beating heart. A high-resolution image acquired over a large fraction of the cardiac cycle will be blurred and distorted by bulk cardiac motion, whereas a very fast image acquired in a shorter time may not have the resolution necessary to trace the course and patency of coronary arteries. Some of the fastest imaging sequences currently implemented, such as echo planar imaging (EPI), approach the goal of yielding images of reasonable resolution in a suitably short fraction of the cardiac cycle. Other approaches have also been tried to eliminate the effects of cardiac motion, including k-space segmentation, in which image acquisition is divided up over several cardiac cycles with ECG gating to ensure that the heart is in the same phase of systole or diastole during acquisition of each segment. Cine images of multiple cardiac phases may be pieced together with this technique, with partial acquisitions of the signal data for different phases occurring in each cardiac cycle. One problem with this class of techniques is that respiratory motion can change the position of the heart over the course of several cardiac cycles. Partial acquisitions will then be misregistered, and artifacts will result. In an attempt to eliminate or adjust for respiratory motion, breath holds, respiratory gating, and navigator echo gating techniques have all been tried, and each of these techniques has had some significant successes. Nevertheless, an imaging strategy which allowed high-resolution images to be acquired comfortably within one or two phases of the cardiac cycle would circumvent many of the difficulties and residual artifacts associated with these compensation techniques.

Detailed Description Text (3):

The invention is best understood in the context of the SMASH imaging technique mentioned above, which sets out to compute, from a given set of magnetic response signals received in a set of coils during one spatial encoding step, a plurality of synthesized signals which correspond to additional spatial encoding steps. While SMASH imaging is applicable to non-Fourier as well as Fourier imaging techniques, the formalism and terminology for Fourier imaging is commonly accepted and well understood, so the description of the present invention will be presented below as applied to the evaluation of coil sensitivities in a SMASH imaging process wherein the MRI processor fits coil sensitivities to produce spatial harmonic signals to fill additional lines in k-space, so that a sparse or reduced set of gradient conditioning steps may be used while still filling the entire data set. In what follows, it is shown that the set of optimal complex weights  $n.\sub{l}.\sup{(m)}$ , necessary for SMASH postprocessing to determine distinctly offset signal lines can be determined using auto-calibration signals (ACS) which are acquired with a small number of additional conditioning or gradient steps, and serve as a form of navigator measurement. The ACS lines represent signals at intermediate positions in k-space, which are spatially encoded in a conventional manner using gradients. Moreover, the set of linear weights,  $n.\sub{l}.\sup{(m)}$  may be extracted automatically

for each acquisition without the intermediate step of coil sensitivity measurements. These coefficients form a transformation which, applied to signals collected in one gradient step, produces multiple distinctly shifted lines of k-space. The transformation thus fills many lines of k-space from a reduced set of gradients.

Detailed Description Text (17):

The derivation of multiple lines of k-space data from uncalibrated coil signals and additional autocalibration signals is achieved as follows. It will be recalled that in SMASH, linear combinations of component coil signals are used to generate composite signals shifted by an amount ( $-m.\text{DELTA}.k.\text{sub}.y$ ) in k-space. In AUTO-SMASH a few extra navigator ACS-lines are acquired during the actual scan which are exactly shifted by the same amount ( $-m.\text{DELTA}.k.\text{sub}.y$ ). This condition is readily fulfilled simply by applying the corresponding gradient conditioning step for acquiring such an offset signal. Relations between the SMASH data set and these extra ACS-data are then used to extract the desired optimal complex weights,  $n.\text{sub}.l.\text{sup}.(m)$ , as follows.

US Reference Patent Number (6):

5910728

US Reference Group (6):

5910728 19990600 Sodickson 324/309

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L15: Entry 6 of 6

File: USPT

Jun 8, 1999

DOCUMENT-IDENTIFIER: US 5910728 A

TITLE: Simultaneous acquisition of spatial harmonics (SMASH): ultra-fast imaging with radiofrequency coil arrays

Brief Summary Text (6):

Often, however, there is a tradeoff between spatial resolution and imaging time, since higher resolution images require a longer acquisition time. This balance between spatial and temporal resolution is particularly important in cardiac MR, where fine details of coronary artery anatomy, for example, must be discerned on the surface of a rapidly beating heart. A high-resolution image acquired over a large fraction of the cardiac cycle will be blurred and distorted by bulk cardiac motion, whereas a very fast image may not have the resolution necessary to trace the course and patency of coronary arteries. Some of the fastest imaging sequences currently implemented, such as echo planar imaging (EPI), approach the goal of yielding images of reasonable resolution in a suitably short fraction of the cardiac cycle. Other approaches have also been tried to eliminate the effects of cardiac motion, including k-space segmentation, in which image acquisition is divided up over several cardiac cycles with ECG gating to ensure that the heart is in the same phase of systole or diastole during acquisition of each segment. Cine images of multiple cardiac phases may be pieced together with this technique, with partial acquisitions for different phases occurring in each cardiac cycle. One problem with this class of techniques is that respiratory motion can change the position of the heart over the course of several cardiac cycles. Partial acquisitions will then be misregistered, and artifacts will result. In an attempt to eliminate or adjust for respiratory motion, breath holds, respiratory gating, and navigator echo gating techniques have all been tried, and each of these techniques has had some significant successes. Nevertheless, an imaging strategy which allowed high-resolution images to be acquired comfortably within one or two phases of the cardiac cycle would circumvent many of the difficulties and residual artifacts associated with these compensation techniques.

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Search Results - Record(s) 1 through 9 of 9 returned.

1. Document ID: US 20040147806 A1

Using default format because multiple data bases are involved.

L18: Entry 1 of 9

File: PGPB

Jul 29, 2004

PGPUB-DOCUMENT-NUMBER: 20040147806

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040147806 A1

TITLE: Intra vascular imaging method and apparatus

PUBLICATION-DATE: July 29, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Adler, Doron	Nesher		IL	

US-CL-CURRENT: 600/109; 600/160

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KIND](#) | [Drawings](#)

2. Document ID: US 20030092995 A1

L18: Entry 2 of 9

File: PGPB

May 15, 2003

PGPUB-DOCUMENT-NUMBER: 20030092995

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030092995 A1

TITLE: System and method of positioning implantable medical devices

PUBLICATION-DATE: May 15, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Thompson, David L.	Andover	MN	US	

US-CL-CURRENT: 600/473

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KIND](#) | [Drawings](#)

**3. Document ID: US 20030065271 A1**

L18: Entry 3 of 9

File: PGPB

Apr 3, 2003

PGPUB-DOCUMENT-NUMBER: 20030065271

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030065271 A1

TITLE: Cardiac catheter imaging system

PUBLICATION-DATE: April 3, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Khoury, Dirar S.	Houston	TX	US	

US-CL-CURRENT: 600/509[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KIND](#) | [Drawings](#)**4. Document ID: US 20020068853 A1**

L18: Entry 4 of 9

File: PGPB

Jun 6, 2002

PGPUB-DOCUMENT-NUMBER: 20020068853

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020068853 A1

TITLE: Intra vascular imaging method and apparatus

PUBLICATION-DATE: June 6, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Adler, Doron	Nesher		IL	

US-CL-CURRENT: 600/160; 600/109[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KIND](#) | [Drawings](#)**5. Document ID: US 6741880 B1**

L18: Entry 5 of 9

File: USPT

May 25, 2004

US-PAT-NO: 6741880DOCUMENT-IDENTIFIER: US 6741880 B1

TITLE: Method and apparatus for efficient stenosis identification and assessment using MR imaging

DATE-ISSUED: May 25, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		
Saranathan; Manojkumar	Rockville	MD		

US-CL-CURRENT: 600/419; 324/300, 324/307, 382/128, 600/407, 600/410, 600/420

Full  Title  Citation  Print  Review  Classification  Date  Reference     Claims  K/MC  Drawn D.

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6. Document ID: US 6692430 B2

L18: Entry 6 of 9

File: USPT

Feb 17, 2004

US-PAT-NO: 6692430

DOCUMENT-IDENTIFIER: US 6692430 B2

TITLE: Intra vascular imaging apparatus

DATE-ISSUED: February 17, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Adler; Doron	Nesher			IL

US-CL-CURRENT: 600/109; 600/108, 600/129, 600/178, 600/179

Full  Title  Citation  Print  Review  Classification  Date  Reference     Claims  K/MC  Drawn D.

---

7. Document ID: US 6597937 B2

L18: Entry 7 of 9

File: USPT

Jul 22, 2003

US-PAT-NO: 6597937

DOCUMENT-IDENTIFIER: US 6597937 B2

TITLE: Self-adaptive tracking and phase encoding during data collection for contrast-enhanced MRA and dynamic agent uptake studies

DATE-ISSUED: July 22, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Kecheng	Solon	OH		
Suri; Jasjit S.	Mayfield Heights	OH		
Cull; Thomas S.	Willoughby Hills	OH		

US-CL-CURRENT: 600/420; 324/306, 324/309, 600/410

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw D]

8. Document ID: US 6408201 B1

L18: Entry 8 of 9

File: USPT

Jun 18, 2002

US-PAT-NO: 6408201

DOCUMENT-IDENTIFIER: US 6408201 B1

TITLE: Method and apparatus for efficient stenosis identification in peripheral arterial vasculature using MR imaging

DATE-ISSUED: June 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		

US-CL-CURRENT: 600/410; 324/300, 324/307, 382/128, 600/419, 600/420

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw D]

9. Document ID: US 6178346 B1

L18: Entry 9 of 9

File: USPT

Jan 23, 2001

US-PAT-NO: 6178346

DOCUMENT-IDENTIFIER: US 6178346 B1

TITLE: Infrared endoscopic imaging in a liquid with suspended particles: method and apparatus

DATE-ISSUED: January 23, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Amundson; David C.	Boulder	CO	80302	
Hanlin; H. John	Louisville	CO	80027	

US-CL-CURRENT: 600/473; 348/77, 600/160, 600/342

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw D]

Term	Documents
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NAVIGATBR	5
NAVIGATC	2
NAVIGATDON	1
NAVIGATE	17529
NAVIGATED	4403
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L18: Entry 5 of 9

File: USPT

May 25, 2004

DOCUMENT-IDENTIFIER: US 6741880 B1

TITLE: Method and apparatus for efficient stenosis identification and assessment using MR imaging

Detailed Description Text (11):

FIG. 4 shows the three-dimensional imaging pulse sequence 160 used in the present invention. Note that the method described is also applicable to two-dimensional pulse sequences as well. As shown in this preferred embodiment, the flow sensitizing gradients 162, 164, and 166 create a flow sensitive pulse sequence that behaves as a screening tool with high sensitivity to the detection of lesions. The flow sensitizing gradients 162, 164, and 166 are bi-polar gradients to accentuate phase cancellation and thereby increase flow dephasing. Alternatively, the flow dephasing in the first MR image can be accomplished by increasing the voxel size for greater distribution of the velocity vectors. In either case, the first (screening) MR image is acquired with high phase cancellation and low resolution, and therefore is acquired relatively fast. Generally, the first screening study can be accomplished with either a flow sensitive pulse sequence, as shown in FIG. 4, or with a contrast material enhanced imaging pulse sequence. The pulse sequence can be either a two-dimensional breath-held acquisition or a three-dimensional free-breathing acquisition that is respiratory-gated using a navigator echo, or similar respiratory gating technique.

US Reference Patent Number (2):6408201US Reference Group (2):6408201 20020600 Foo et al. 324/300[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#) [Generate Collection](#) 

L18: Entry 8 of 9

File: USPT

Jun 18, 2002

DOCUMENT-IDENTIFIER: US 6408201 B1

TITLE: Method and apparatus for efficient stenosis identification in peripheral arterial vasculature using MR imaging

Detailed Description Text (13):

FIG. 4 shows the phase contrast imaging pulse sequence 160 used in acquiring the series of first MR images. As shown in this preferred embodiment, the flow sensitizing gradients 162, 164, and 166 create a flow sensitive pulse sequence that behaves as a screening tool with high sensitivity to the detection of lesions. The flow sensitizing gradients 162, 164, and 166 are bi-polar gradients to accentuate phase cancellation and thereby increase flow dephasing. Alternatively, the flow dephasing in the series of first MR images can be accomplished by increasing the voxel size for greater distribution of the velocity vectors. In either case, the first (screening) MR images acquired with high phase cancellation and low resolution, and therefore are acquired relatively fast. Generally, the first screening study can be accomplished with either a flow sensitive pulse sequence, as shown in FIG. 4, or with a contrast material enhanced imaging pulse sequence. The pulse sequence can be either a two-dimensional breath-held acquisition or a three-dimensional free-breathing acquisition that is respiratory-gated using a navigator echo, or similar respiratory gating technique.

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L18: Entry 9 of 9

File: USPT

Jan 23, 2001

DOCUMENT-IDENTIFIER: US 6178346 B1

TITLE: Infrared endoscopic imaging in a liquid with suspended particles: method and apparatus

Brief Summary Text (7):

The advantages to seeing structures in the cardiovascular system are numerous. Current methods of visualizing structures in the cardiovascular system are limited to radiography, ultrasound and angioscopy. Radiography is the standard visual tool used to image interventional cardiology procedures. It is applied by a large X-ray apparatus on a C-arm that will rotate around the patient through 180 degrees. The heart appears as a faint outline; while the metallic catheters are brightest. This allows for gross estimation of the catheter end to faint landmarks of the heart. The C-arm is frequently repositioned to give better viewing perspectives. Once the catheter has been navigated to the heart it can be placed in a coronary artery. In a self-contained entity such as an artery or vein, fluoroscopic sensitive dye can be injected out the distal end of the catheter and viewed on the radiography camera for a short distance before it diffuses with blood. This technique is used to spot constricted areas in the coronary arteries. It has been shown that radiography, however, usually underestimates the degree of stenosis and therefore is only useful in providing a gross measure of flow.

Brief Summary Text (32):

An endoscopic imaging system, transparent to blood, would have enormous consequences in observing malformations, assisting catheter navigation, diagnosing cardiac conditions and observing procedures inside the heart or in the vasculature. The scope of this invention is not limited to cardiology but extends to other fields as well such as neurology and oncology. In addition, having "sight" in the vasculature will lead to many procedures unforeseen at this time. Today, laparoscopic procedures include suturing, excising and stapling. Similar procedures could be adapted for the cardiovascular system if the procedure could be viewed.

Brief Summary Text (36):

An important use of an infrared endoscope, in the heart, is to provide a visual guide for cardiac catheters navigating the vasculature. Catheters are inserted in the leg, arm or neck and snaked through the appropriate vasculature branches to the cardiac chamber of interest. Catheters are routinely placed in specific areas of the left and right atriums, left and right ventricles and the coronary sinus. Navigating the vasculature, to arrive at these destinations can be a troublesome procedure. This is currently accomplished by viewing the fluoroscopic image of the patient's chest. This image provides the physician with a faint image of the heart and its relation to the catheter, which is much brighter since it, is metallic or has fluoroscopic markers. If the catheter is positioned in the wrong branch of the vasculature, it eventually becomes apparent from the fluoroscopic image. At that point the physician retracts the catheter, rotates and tries again. He might even fully retract the catheter, reshape it and insert it again, hoping the new confirmation will allow catheter passage through the appropriate branches in the vasculature. Small branches of coronary arteries usually require many attempts before the correct branch is reached. Visual images of the catheter and the branch

in the vasculature would make this procedure much considerably easier and quicker. This embodiment could be accomplished by incorporating a visual guide with its own retractable guide wire. When a choice in direction is needed, the guide would extend and force the catheter to follow in a specific direction. If an image of the catheter reaching a branch in the vasculature were available, the physician could maneuver the catheter into the correct branch. Additionally, visualization will allow passage of smaller arteries previously not considered navigable, permitting angioplasty procedures and other therapies in these small arteries.

Detailed Description Text (113):

In this application, the infrared endoscope (43), with a stylet hole (44) on the side of the catheter (monorail configuration) is slid over a guide wire (45), which has been placed through the site of athlerosclerotic plaque undergoing an angioplasty procedure. The infrared endoscope is configured for side- and forward viewing to permit imaging the arterial lumen as well as a region ahead of the catheter. Each view will be presented separately or in a combined image on the video console (32). The side view will be most useful in providing detailed images of the coronary artery lumen at the plaque site. This view will permit the shape and nature (calcified or fatty) of the plaque to be determined, prior to angioplasty. Furthermore, the lumen of the deployed stent can be accurately characterized. Observation of stent buckling would suggest insertion of another angioplasty catheter to either apply more pressure to straighten the buckle, or insertion of an additional stent overlapping the original stent. The forward view would prove useful in catheter navigation through the vascular tree to the coronary artery containing the athlerosclerotic plaque deposit.

Detailed Description Text (116):

The infrared endoscope could image the plaque deposit from a forward-view--aiding in navigation of the vascular tree. With this wavelength, a cross-section approximately 4-5 millimeters, ahead of the infrared endoscope catheter, could be imaged. This permits navigation of smaller coronary arteries. Small coronary artery branches, not previously navigable with radiographic dye imaging techniques, could be identified and entered. When the lumens of some of these branches are reduced, deleterious cardiac consequences often occur. Prime examples are the coronary arteries (about one-millimeter in diameter) which supply blood to the natural pacemaker centers of the heart: the atrio-ventricular (AV) and sino-atrial (SA). These nodes control the rhythm of the atria and ventricles respectively. Disruption of blood supply of these arteries leads to rhythm disturbances such as slowdown or long pauses between heartbeats. These conditions are presently treated with a permanently implantable pacemaker--providing a minimum artificial rhythm for the patient. Using this infrared endoscope embodiment, these arteries could be identified and entered with the guide wire over which a small angioplasty catheter could be inserted to apply pressure, and possibly deploying a small stent to re-vascularize these arteries. In addition to navigation, the athlerosclerotic plaque deposit could be visualized--without inserting the catheter through the plaque deposit. This would be important in visualizing plaque deposits that leave a lumen too small for passage of a catheter. This would permit smaller sized catheters to be inserted to apply angioplasty or plaque debulking procedures (atherectomy procedure).

Detailed Description Text (133):

Other applications or procedures where the second embodiment can be used include cardiac valve inspection (natural and artificial), viewing septal defects, myocardial infarctions and transpositions of the heart, viewing in-dwelling catheters and providing navigation guidance for catheters. Guiding electrode placement in catheters could also be realized with the infrared endoscope in, for example, pacing and defibrillator electrodes. Guidance of channels made in the heart during transmyocardial revascularizaion procedures would also be realized with the infrared endoscope.

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### Search Results - Record(s) 1 through 15 of 15 returned.

1. Document ID: US 20040147806 A1

Using default format because multiple data bases are involved.

L22: Entry 1 of 15

File: PGPB

Jul 29, 2004

PGPUB-DOCUMENT-NUMBER: 20040147806

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040147806 A1

TITLE: Intra vascular imaging method and apparatus

PUBLICATION-DATE: July 29, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Adler, Doron	Nesher		IL	

US-CL-CURRENT: 600/109; 600/160

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KINIC](#) | [Drawings](#)

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2. Document ID: US 20030092995 A1

L22: Entry 2 of 15

File: PGPB

May 15, 2003

PGPUB-DOCUMENT-NUMBER: 20030092995

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030092995 A1

TITLE: System and method of positioning implantable medical devices

PUBLICATION-DATE: May 15, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Thompson, David L.	Andover	MN	US	

US-CL-CURRENT: 600/473

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KINIC](#) | [Drawings](#)

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**3. Document ID: US 20030065271 A1**

L22: Entry 3 of 15

File: PGPB

Apr 3, 2003

PGPUB-DOCUMENT-NUMBER: 20030065271

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030065271 A1

TITLE: Cardiac catheter imaging system

PUBLICATION-DATE: April 3, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Khoury, Dirar S.	Houston	TX	US	

US-CL-CURRENT: 600/509[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [DIVE](#) | [Drawings](#)**4. Document ID: US 20020068853 A1**

L22: Entry 4 of 15

File: PGPB

Jun 6, 2002

PGPUB-DOCUMENT-NUMBER: 20020068853

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020068853 A1

TITLE: Intra vascular imaging method and apparatus

PUBLICATION-DATE: June 6, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Adler, Doron	Nesher		IL	

US-CL-CURRENT: 600/160; 600/109[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [DIVE](#) | [Drawings](#)**5. Document ID: US 6741880 B1**

L22: Entry 5 of 15

File: USPT

May 25, 2004

US-PAT-NO: 6741880DOCUMENT-IDENTIFIER: US 6741880 B1

TITLE: Method and apparatus for efficient stenosis identification and assessment using MR imaging

DATE-ISSUED: May 25, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		
Saranathan; Manojkumar	Rockville	MD		

US-CL-CURRENT: 600/419; 324/300, 324/307, 382/128, 600/407, 600/410, 600/420

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>				<a href="#">Claims</a>	<a href="#">KMC</a>	<a href="#">Drawn</a>	<a href="#">D</a>
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**6. Document ID: US 6692430 B2**

L22: Entry 6 of 15

File: USPT

Feb 17, 2004

US-PAT-NO: 6692430

DOCUMENT-IDENTIFIER: US 6692430 B2

TITLE: Intra vascular imaging apparatus

DATE-ISSUED: February 17, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Adler; Doron	Nesher			IL

US-CL-CURRENT: 600/109; 600/108, 600/129, 600/178, 600/179

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>				<a href="#">Claims</a>	<a href="#">KMC</a>	<a href="#">Drawn</a>	<a href="#">D</a>
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**7. Document ID: US 6675034 B2**

L22: Entry 7 of 15

File: USPT

Jan 6, 2004

US-PAT-NO: 6675034

DOCUMENT-IDENTIFIER: US 6675034 B2

TITLE: Magnetic resonance imaging using direct, continuous real-time imaging for motion compensation

DATE-ISSUED: January 6, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sussman; Marshall S.	Toronto			CA
Wright; Graham A.	Toronto			CA
Cunningham; Charles H.	Toronto			CA

US-CL-CURRENT: 600/410

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Drawn D]

8. Document ID: US 6667618 B2

L22: Entry 8 of 15

File: USPT

Dec 23, 2003

US-PAT-NO: 6667618

DOCUMENT-IDENTIFIER: US 6667618 B2

TITLE: Method for the operation of a magnetic resonance apparatus, whereby positional changes are acquired with orbital navigator echos

DATE-ISSUED: December 23, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Thesen; Stefan	Meckenheim			DE

US-CL-CURRENT: 324/309; 324/307

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Drawn D]

9. Document ID: US 6597937 B2

L22: Entry 9 of 15

File: USPT

Jul 22, 2003

US-PAT-NO: 6597937

DOCUMENT-IDENTIFIER: US 6597937 B2

TITLE: Self-adaptive tracking and phase encoding during data collection for contrast-enhanced MRA and dynamic agent uptake studies

DATE-ISSUED: July 22, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Kecheng	Solon	OH		
Suri; Jasjit S.	Mayfield Heights	OH		
Cull; Thomas S.	Willoughby Hills	OH		

US-CL-CURRENT: 600/420; 324/306, 324/309, 600/410

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Drawn D]

10. Document ID: US 6552540 B2

L22: Entry 10 of 15

File: USPT

Apr 22, 2003

US-PAT-NO: 6552540

DOCUMENT-IDENTIFIER: US 6552540 B2

TITLE: Magnetic resonance method for forming a fast dynamic image

DATE-ISSUED: April 22, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fuderer; Miha	Eindhoven			NL

US-CL-CURRENT: 324/309

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Drawn Ds](#)

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11. Document ID: US 6408201 B1

L22: Entry 11 of 15

File: USPT

Jun 18, 2002

US-PAT-NO: 6408201

DOCUMENT-IDENTIFIER: US 6408201 B1

TITLE: Method and apparatus for efficient stenosis identification in peripheral arterial vasculature using MR imaging

DATE-ISSUED: June 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		

US-CL-CURRENT: 600/410; 324/300, 324/307, 382/128, 600/419, 600/420

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Drawn Ds](#)

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12. Document ID: US 6407549 B1

L22: Entry 12 of 15

File: USPT

Jun 18, 2002

US-PAT-NO: 6407549

DOCUMENT-IDENTIFIER: US 6407549 B1

TITLE: Magnetic resonance signal acquiring method and apparatus, recording medium and magnetic resonance imaging apparatus

DATE-ISSUED: June 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Uetake; Nozomu	Tokyo			JP

Kosugi; Susumu

Tokyo

JP

US-CL-CURRENT: 324/307; 324/309, 324/322[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Claims](#) | [KWC](#) | [Drawn Ds](#)**□ 13. Document ID: US 6289232 B1**

L22: Entry 13 of 15

File: USPT

Sep 11, 2001

US-PAT-NO: 6289232DOCUMENT-IDENTIFIER: US 6289232 B1

TITLE: Coil array autocalibration MR imaging

DATE-ISSUED: September 11, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jakob; Peter M.	Brookline Village	MA		
Sodickson; Daniel K.	Cambridge	MA		
Griswold; Mark	Brookline	MA		

US-CL-CURRENT: 600/410; 324/307, 324/309, 324/318, 324/322, 600/422[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Claims](#) | [KWC](#) | [Drawn Ds](#)**□ 14. Document ID: US 6178346 B1**

L22: Entry 14 of 15

File: USPT

Jan 23, 2001

US-PAT-NO: 6178346DOCUMENT-IDENTIFIER: US 6178346 B1

TITLE: Infrared endoscopic imaging in a liquid with suspended particles: method and apparatus

DATE-ISSUED: January 23, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Amundson; David C.	Boulder	CO	80302	
Hanlin; H. John	Louisville	CO	80027	

US-CL-CURRENT: 600/473; 348/77, 600/160, 600/342[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Claims](#) | [KWC](#) | [Drawn Ds](#)

15. Document ID: US 5910728 A

L22: Entry 15 of 15

File: USPT

Jun 8, 1999

US-PAT-NO: 5910728

DOCUMENT-IDENTIFIER: US 5910728 A

TITLE: Simultaneous acquisition of spatial harmonics (SMASH): ultra-fast imaging with radiofrequency coil arrays

DATE-ISSUED: June 8, 1999

**INVENTOR-INFORMATION:**

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sodickson; Daniel Kevin	Cambridge	MA		

US-CL-CURRENT: 324/309

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Search](#) | [Help](#) | [Log In](#)

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NAVIGATBR	5
NAVIGATC	2
NAVIGATDON	1
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NAVIGATED	4403
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1. Document ID: US 20040044279 A1

Using default format because multiple data bases are involved.

L23: Entry 1 of 23

File: PGPB

Mar 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040044279

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040044279 A1

TITLE: System and method for adjusting image parameters based on device tracking

PUBLICATION-DATE: March 4, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lewin, Jonathan S.	Beachwood	OH	US	
Duerk, Jeffrey L.	Avon Lake	OH	US	
Elgort, Daniel	Cleveland Heights	OH	US	

US-CL-CURRENT: 600/407; 600/410, 600/424

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [EPOC](#) | [Drawings](#)

2. Document ID: US 20040039276 A1

L23: Entry 2 of 23

File: PGPB

Feb 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040039276

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040039276 A1

TITLE: Magnetic resonance imaging apparatus

PUBLICATION-DATE: February 26, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ikezaki, Yoshikazu	Tokyo		JP	

US-CL-CURRENT: 600/407

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [EPOC](#) | [Drawings](#)

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**3. Document ID: US 20030052875 A1**

L23: Entry 3 of 23

File: PGPB

Mar 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030052875

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030052875 A1

TITLE: System and method to obtain surface structures of multi-dimensional objects, and to represent those surface structures for animation, transmission and display

PUBLICATION-DATE: March 20, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Salomie, Ioan Alexandru	Brussels		BE	

US-CL-CURRENT: 345/419

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<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">EPOC</a>	<a href="#">Drawings</a>
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**4. Document ID: US 20020087503 A1**

L23: Entry 4 of 23

File: PGPB

Jul 4, 2002

PGPUB-DOCUMENT-NUMBER: 20020087503

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020087503 A1

TITLE: Medical image management system

PUBLICATION-DATE: July 4, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Judd, Robert M.	Wheeling	IL	US	
Chen, Enn-Ling	Chicago	IL	US	
Kim, Raymond J.	Chicago	IL	US	

US-CL-CURRENT: 707/1

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<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">EPOC</a>	<a href="#">Drawings</a>
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**5. Document ID: US 20020045816 A1**

L23: Entry 5 of 23

File: PGPB

Apr 18, 2002

PGPUB-DOCUMENT-NUMBER: 20020045816

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020045816 A1

TITLE: Apparatus, systems, and methods for in vivo magnetic resonance imaging

PUBLICATION-DATE: April 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Atalar, Ergin	Columbia	MD	US	
Bottomley, Paul A.	Columbia	MD	US	
Karmarkar, Parag	Elliott City	MD	US	
Lardo, Albert C.	Baldwin	MD	US	
Zerhouni, Elias	Pasadena	MD	US	

US-CL-CURRENT: 600/423; 324/318

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KIMC](#) | [Drawn D](#)

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□ 6. Document ID: US 20020010384 A1

L23: Entry 6 of 23

File: PGPB

Jan 24, 2002

PGPUB-DOCUMENT-NUMBER: 20020010384

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020010384 A1

TITLE: Apparatus and method for calibrating an endoscope

PUBLICATION-DATE: January 24, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shahidi, Ramin	San Francisco	CA	US	
Epitaux, Marc	Sunnyvale	CA	US	

US-CL-CURRENT: 600/118; 600/117

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KIMC](#) | [Drawn D](#)

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□ 7. Document ID: US 20010051761 A1

L23: Entry 7 of 23

File: PGPB

Dec 13, 2001

PGPUB-DOCUMENT-NUMBER: 20010051761

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20010051761 A1

TITLE: Apparatus and method for calibrating an endoscope

PUBLICATION-DATE: December 13, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Khadem, Rasool	Palo Alto	CA	US	

US-CL-CURRENT: 600/117; 600/118[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KINIC](#) | [Drawn Ds](#)

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**□ 8. Document ID: US 6745259 B2**

L23: Entry 8 of 23

File: USPT

Jun 1, 2004

US-PAT-NO: 6745259

DOCUMENT-IDENTIFIER: US 6745259 B2

TITLE: OPEN NETWORK SYSTEM FOR I/O OPERATION INCLUDING A COMMON GATEWAY INTERFACE AND AN EXTENDED OPEN NETWORK PROTOCOL WITH NON-STANDARD I/O DEVICES UTILIZING DEVICE AND IDENTIFIER FOR OPERATION TO BE PERFORMED WITH DEVICE

DATE-ISSUED: June 1, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wagner; Richard Hiers	Dunwoody	GA		

US-CL-CURRENT: 710/33; 370/401, 709/203, 709/227, 709/228, 710/11, 710/20[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KINIC](#) | [Drawn Ds](#)

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**□ 9. Document ID: US 6741880 B1**

L23: Entry 9 of 23

File: USPT

May 25, 2004

US-PAT-NO: 6741880

DOCUMENT-IDENTIFIER: US 6741880 B1

TITLE: Method and apparatus for efficient stenosis identification and assessment using MR imaging

DATE-ISSUED: May 25, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		
Saranathan; Manojkumar	Rockville	MD		

US-CL-CURRENT: 600/419; 324/300, 324/307, 382/128, 600/407, 600/410, 600/420[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KINIC](#) | [Drawn Ds](#)

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10. Document ID: US 6694387 B2

L23: Entry 10 of 23

File: USPT

Feb 17, 2004

US-PAT-NO: 6694387  
DOCUMENT-IDENTIFIER: US 6694387 B2

TITLE: System for enabling smart card transactions to occur over the internet and associated method

DATE-ISSUED: February 17, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wagner; Richard Hiers	Dunwoody	GA		

US-CL-CURRENT: 710/33; 370/401, 705/26, 709/203, 709/227, 709/228, 710/11, 710/20

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Claims](#) | [EPONC](#) | [Drawings](#)

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11. Document ID: US 6684269 B2

L23: Entry 11 of 23

File: USPT

Jan 27, 2004

US-PAT-NO: 6684269  
DOCUMENT-IDENTIFIER: US 6684269 B2

TITLE: System and method for enabling transactions between a web server and a smart card, telephone, or personal digital assistant over the internet

DATE-ISSUED: January 27, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wagner; Richard Hiers	Dunwoody	GA		

US-CL-CURRENT: 710/33; 370/401, 709/203, 709/227, 709/228, 710/11, 710/20

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Claims](#) | [EPONC](#) | [Drawings](#)

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12. Document ID: US 6628980 B2

L23: Entry 12 of 23

File: USPT

Sep 30, 2003

US-PAT-NO: 6628980  
DOCUMENT-IDENTIFIER: US 6628980 B2

TITLE: Apparatus, systems, and methods for in vivo magnetic resonance imaging

DATE-ISSUED: September 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Atalar; Ergin	Columbia	MD		
Bottomley; Paul A.	Columbia	MD		
Karmarkar; Parag	Elliott City	MD		
Lardo; Albert C.	Baldwin	MD		
Zerhouni; Elias	Pasadena	MD		

US-CL-CURRENT: 600/423; 324/318

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Draw](#)

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13. Document ID: US 6517478 B2

L23: Entry 13 of 23

File: USPT

Feb 11, 2003

US-PAT-NO: 6517478

DOCUMENT-IDENTIFIER: US 6517478 B2

TITLE: Apparatus and method for calibrating an endoscope

DATE-ISSUED: February 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Khadem; Rasool	Palo Alto	CA		

US-CL-CURRENT: 600/117; 600/102, 73/1.79

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [KMC](#) | [Draw](#)

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14. Document ID: US 6511418 B2

L23: Entry 14 of 23

File: USPT

Jan 28, 2003

US-PAT-NO: 6511418

DOCUMENT-IDENTIFIER: US 6511418 B2

TITLE: Apparatus and method for calibrating and endoscope

DATE-ISSUED: January 28, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shahidi; Ramin	San Francisco	CA		
Epitaux; Marc	Sunnyvale	CA		

US-CL-CURRENT: 600/117; 600/102, 73/1.79

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw] [De]

15. Document ID: US 6415046 B1

L23: Entry 15 of 23

File: USPT

Jul 2, 2002

US-PAT-NO: 6415046

DOCUMENT-IDENTIFIER: US 6415046 B1

TITLE: Method and apparatus for the early detection of tissue pathology using wavelet transformation

DATE-ISSUED: July 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kerut, Sr.; Edmund Kenneth	Harahan	LA	70123	

US-CL-CURRENT: 382/128; 382/130

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw] [De]

16. Document ID: US 6408201 B1

L23: Entry 16 of 23

File: USPT

Jun 18, 2002

US-PAT-NO: 6408201

DOCUMENT-IDENTIFIER: US 6408201 B1

TITLE: Method and apparatus for efficient stenosis identification in peripheral arterial vasculature using MR imaging

DATE-ISSUED: June 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		

US-CL-CURRENT: 600/410; 324/300, 324/307, 382/128, 600/419, 600/420

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw] [De]

17. Document ID: US 6353752 B1

L23: Entry 17 of 23

File: USPT

Mar 5, 2002

US-PAT-NO: 6353752

DOCUMENT-IDENTIFIER: US 6353752 B1

TITLE: Reduced field-of-view method for cine magnetic resonance imaging

DATE-ISSUED: March 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Madore; Bruno	Redwood City	CA		
Pelc; Norbert J.	Los Altos	CA		

US-CL-CURRENT: 600/410; 324/307, 324/309

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Claims](#) | [KMC](#) | [Draw](#) | [D](#)

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18. Document ID: US 6289232 B1

L23: Entry 18 of 23

File: USPT

Sep 11, 2001

US-PAT-NO: 6289232

DOCUMENT-IDENTIFIER: US 6289232 B1

TITLE: Coil array autocalibration MR imaging

DATE-ISSUED: September 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jakob; Peter M.	Brookline Village	MA		
Sodickson; Daniel K.	Cambridge	MA		
Griswold; Mark	Brookline	MA		

US-CL-CURRENT: 600/410; 324/307, 324/309, 324/318, 324/322, 600/422

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Claims](#) | [KMC](#) | [Draw](#) | [D](#)

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19. Document ID: US 6178346 B1

L23: Entry 19 of 23

File: USPT

Jan 23, 2001

US-PAT-NO: 6178346

DOCUMENT-IDENTIFIER: US 6178346 B1

TITLE: Infrared endoscopic imaging in a liquid with suspended particles: method and apparatus

DATE-ISSUED: January 23, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Amundson; David C.	Boulder	CO	80302	
Hanlin; H. John	Louisville	CO	80027	

US-CL-CURRENT: 600/473; 348/77, 600/160, 600/342

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KJC] [Drawings]

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20. Document ID: US 6067465 A

L23: Entry 20 of 23

File: USPT

May 23, 2000

US-PAT-NO: 6067465

DOCUMENT-IDENTIFIER: US 6067465 A

\*\* See image for Certificate of Correction \*\*

TITLE: System and method for detecting and tracking reference position changes with linear phase shift in magnetic resonance imaging

DATE-ISSUED: May 23, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
King; Kevin F.	Megnon	WI		

US-CL-CURRENT: 600/410; 324/309

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KJC] [Drawings]

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21. Document ID: US 5910728 A

L23: Entry 21 of 23

File: USPT

Jun 8, 1999

US-PAT-NO: 5910728

DOCUMENT-IDENTIFIER: US 5910728 A

TITLE: Simultaneous acquisition of spatial harmonics (SMASH): ultra-fast imaging with radiofrequency coil arrays

DATE-ISSUED: June 8, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sodickson; Daniel Kevin	Cambridge	MA		

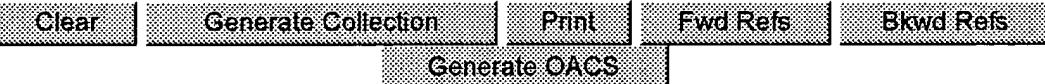
US-CL-CURRENT: 324/309

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KJC] [Drawings]

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22. Document ID: EP 1391746 A2

## Hit List



Search Results - Record(s) 1 through 17 of 17 returned.

1. Document ID: US 20040044279 A1

Using default format because multiple data bases are involved.

L27: Entry 1 of 17

File: PGPB

Mar 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040044279

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040044279 A1

TITLE: System and method for adjusting image parameters based on device tracking

PUBLICATION-DATE: March 4, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lewin, Jonathan S.	Beachwood	OH	US	
Duerk, Jeffrey L.	Avon Lake	OH	US	
Elgort, Daniel	Cleveland Heights	OH	US	

US-CL-CURRENT: 600/407; 600/410, 600/424



2. Document ID: US 20040039276 A1

L27: Entry 2 of 17

File: PGPB

Feb 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040039276

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040039276 A1

TITLE: Magnetic resonance imaging apparatus

PUBLICATION-DATE: February 26, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ikezaki, Yoshikazu	Tokyo		JP	

US-CL-CURRENT: 600/407



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**3. Document ID: US 20030052875 A1**

L27: Entry 3 of 17

File: PGPB

Mar 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030052875

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030052875 A1

TITLE: System and method to obtain surface structures of multi-dimensional objects, and to represent those surface structures for animation, transmission and display

PUBLICATION-DATE: March 20, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Salomie, Ioan Alexandru	Brussels		BE	

US-CL-CURRENT: 345/419

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<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KIND</a>	<a href="#">Drawings</a>
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**4. Document ID: US 20020045816 A1**

L27: Entry 4 of 17

File: PGPB

Apr 18, 2002

PGPUB-DOCUMENT-NUMBER: 20020045816

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020045816 A1

TITLE: Apparatus, systems, and methods for in vivo magnetic resonance imaging

PUBLICATION-DATE: April 18, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Atalar, Ergin	Columbia	MD	US	
Bottomley, Paul A.	Columbia	MD	US	
Karmarkar, Parag	Elliott City	MD	US	
Lardo, Albert C.	Baldwin	MD	US	
Zerhouni, Elias	Pasadena	MD	US	

US-CL-CURRENT: 600/423; 324/318

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<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">Claims</a>	<a href="#">KIND</a>	<a href="#">Drawings</a>
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**5. Document ID: US 6745259 B2**

L27: Entry 5 of 17

File: USPT

Jun 1, 2004

US-PAT-NO: 6745259  
DOCUMENT-IDENTIFIER: US 6745259 B2

TITLE: OPEN NETWORK SYSTEM FOR I/O OPERATION INCLUDING A COMMON GATEWAY INTERFACE AND AN EXTENDED OPEN NETWORK PROTOCOL WITH NON-STANDARD I/O DEVICES UTILIZING DEVICE AND IDENTIFIER FOR OPERATION TO BE PERFORMED WITH DEVICE

DATE-ISSUED: June 1, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wagner; Richard Hiers	Dunwoody	GA		

US-CL-CURRENT: 710/33; 370/401, 709/203, 709/227, 709/228, 710/11, 710/20

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Drawings](#) | [Claims](#) | [EPOC](#) | [Drawings](#)

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6. Document ID: US 6741880 B1

L27: Entry 6 of 17

File: USPT

May 25, 2004

US-PAT-NO: 6741880  
DOCUMENT-IDENTIFIER: US 6741880 B1

TITLE: Method and apparatus for efficient stenosis identification and assessment using MR imaging

DATE-ISSUED: May 25, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		
Saranathan; Manojkumar	Rockville	MD		

US-CL-CURRENT: 600/419; 324/300, 324/307, 382/128, 600/407, 600/410, 600/420

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Drawings](#) | [Claims](#) | [EPOC](#) | [Drawings](#)

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7. Document ID: US 6694387 B2

L27: Entry 7 of 17

File: USPT

Feb 17, 2004

US-PAT-NO: 6694387  
DOCUMENT-IDENTIFIER: US 6694387 B2

TITLE: System for enabling smart card transactions to occur over the internet and associated method

DATE-ISSUED: February 17, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wagner; Richard Hiers	Dunwoody	GA		

US-CL-CURRENT: 710/33; 370/401, 705/26, 709/203, 709/227, 709/228, 710/11, 710/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KIMC	Drawn D
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## □ 8. Document ID: US 6684269 B2

L27: Entry 8 of 17

File: USPT

Jan 27, 2004

US-PAT-NO: 6684269

DOCUMENT-IDENTIFIER: US 6684269 B2

TITLE: System and method for enabling transactions between a web server and a smart card, telephone, or personal digital assistant over the internet

DATE-ISSUED: January 27, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wagner; Richard Hiers	Dunwoody	GA		

US-CL-CURRENT: 710/33; 370/401, 709/203, 709/227, 709/228, 710/11, 710/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KIMC	Drawn D
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## □ 9. Document ID: US 6628980 B2

L27: Entry 9 of 17

File: USPT

Sep 30, 2003

US-PAT-NO: 6628980

DOCUMENT-IDENTIFIER: US 6628980 B2

TITLE: Apparatus, systems, and methods for in vivo magnetic resonance imaging

DATE-ISSUED: September 30, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Atalar; Ergin	Columbia	MD		
Bottomley; Paul A.	Columbia	MD		
Karmarkar; Parag	Elliott City	MD		
Lardo; Albert C.	Baldwin	MD		
Zerhouni; Elias	Pasadena	MD		

US-CL-CURRENT: 600/423; 324/318

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw D]

10. Document ID: US 6415046 B1

L27: Entry 10 of 17

File: USPT

Jul 2, 2002

US-PAT-NO: 6415046

DOCUMENT-IDENTIFIER: US 6415046 B1

TITLE: Method and apparatus for the early detection of tissue pathology using wavelet transformation

DATE-ISSUED: July 2, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kerut, Sr.; Edmund Kenneth	Harahan	LA	70123	

US-CL-CURRENT: 382/128; 382/130

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw D]

11. Document ID: US 6408201 B1

L27: Entry 11 of 17

File: USPT

Jun 18, 2002

US-PAT-NO: 6408201

DOCUMENT-IDENTIFIER: US 6408201 B1

TITLE: Method and apparatus for efficient stenosis identification in peripheral arterial vasculature using MR imaging

DATE-ISSUED: June 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		

US-CL-CURRENT: 600/410; 324/300, 324/307, 382/128, 600/419, 600/420

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw D]

12. Document ID: US 6289232 B1

L27: Entry 12 of 17

File: USPT

Sep 11, 2001

US-PAT-NO: 6289232

DOCUMENT-IDENTIFIER: US 6289232 B1

TITLE: Coil array autocalibration MR imaging

DATE-ISSUED: September 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jakob; Peter M.	Brookline Village	MA		
Sodickson; Daniel K.	Cambridge	MA		
Griswold; Mark	Brookline	MA		

US-CL-CURRENT: 600/410; 324/307, 324/309, 324/318, 324/322, 600/422

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Claims](#) | [KMC](#) | [Drawings](#)

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13. Document ID: US 6178346 B1

L27: Entry 13 of 17

File: USPT

Jan 23, 2001

US-PAT-NO: 6178346

DOCUMENT-IDENTIFIER: US 6178346 B1

TITLE: Infrared endoscopic imaging in a liquid with suspended particles: method and apparatus

DATE-ISSUED: January 23, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Amundson; David C.	Boulder	CO	80302	
Hanlin; H. John	Louisville	CO	80027	

US-CL-CURRENT: 600/473; 348/77, 600/160, 600/342

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Claims](#) | [KMC](#) | [Drawings](#)

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14. Document ID: US 6067465 A

L27: Entry 14 of 17

File: USPT

May 23, 2000

US-PAT-NO: 6067465

DOCUMENT-IDENTIFIER: US 6067465 A

**\*\* See image for Certificate of Correction \*\***

TITLE: System and method for detecting and tracking reference position changes with linear phase shift in magnetic resonance imaging

DATE-ISSUED: May 23, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
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Foo; Thomas K. F. Rockville MD  
King; Kevin F. Megnon WI

US-CL-CURRENT: 600/410; 324/309

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw D]

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15. Document ID: US 5910728 A

L27: Entry 15 of 17

File: USPT

Jun 8, 1999

US-PAT-NO: 5910728

DOCUMENT-IDENTIFIER: US 5910728 A

TITLE: Simultaneous acquisition of spatial harmonics (SMASH): ultra-fast imaging with radiofrequency coil arrays

DATE-ISSUED: June 8, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sodickson; Daniel Kevin	Cambridge	MA		

US-CL-CURRENT: 324/309

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw D]

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16. Document ID: EP 1391746 A2

L27: Entry 16 of 17

File: EPAB

Feb 25, 2004

PUB-NO: EP001391746A2

DOCUMENT-IDENTIFIER: EP 1391746 A2

TITLE: Parallel magnetic resonance imaging using navigator echos

[Full] [Title] [Citation] [Front] [Review] [Classification] [Date] [Reference] [Claims] [KMC] [Draw D]

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17. Document ID: CN 1487305 A, EP 1391746 A2, US 20040039276 A1, JP 2004073538 A, KR 2004017777 A

L27: Entry 17 of 17

File: DWPI

Apr 7, 2004

DERWENT-ACC-NO: 2004-182325

DERWENT-WEEK: 200441

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TITLE: Magnetic resonance imaging (MRI) apparatus for parallel imaging of subject has post-image producing device, which forms image with full field-of-view based on produced intermediate image and phase-corrected sensitivity matrix

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Search](#) | [Advanced Search](#) | [Claims](#) | [KMC](#) | [Draw](#) | [Def](#)

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Term	Documents
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IMAG	5056
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IMAGAE	16
IMAGAES	5
IMAGAGE	4
IMAGAGED	2
(L26 AND (IMAG\$4) .PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	17

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1. Document ID: US 20040039276 A1

Using default format because multiple data bases are involved.

L29: Entry 1 of 12

File: PGPB

Feb 26, 2004

PGPUB-DOCUMENT-NUMBER: 20040039276

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040039276 A1

TITLE: Magnetic resonance imaging apparatus

PUBLICATION-DATE: February 26, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ikezaki, Yoshikazu	Tokyo		JP	

US-CL-CURRENT: 600/407

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KJC](#) | [Drawings](#)

2. Document ID: US 20030052875 A1

L29: Entry 2 of 12

File: PGPB

Mar 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030052875

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030052875 A1

TITLE: System and method to obtain surface structures of multi-dimensional objects, and to represent those surface structures for animation, transmission and display

PUBLICATION-DATE: March 20, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Salomie, Ioan Alexandru	Brussels		BE	

US-CL-CURRENT: 345/419

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KJC](#) | [Drawings](#)

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**3. Document ID: US 20020045816 A1**

L29: Entry 3 of 12

File: PGPB

Apr 18, 2002

PGPUB-DOCUMENT-NUMBER: 20020045816

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020045816 A1

TITLE: Apparatus, systems, and methods for in vivo magnetic resonance imaging

PUBLICATION-DATE: April 18, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Atalar, Ergin	Columbia	MD	US	
Bottomley, Paul A.	Columbia	MD	US	
Karmarkar, Parag	Elliott City	MD	US	
Lardo, Albert C.	Baldwin	MD	US	
Zerhouni, Elias	Pasadena	MD	US	

US-CL-CURRENT: 600/423; 324/318

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[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KINIC](#) | [Drawn D](#)

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**4. Document ID: US 6741880 B1**

L29: Entry 4 of 12

File: USPT

May 25, 2004

US-PAT-NO: 6741880

DOCUMENT-IDENTIFIER: US 6741880 B1

TITLE: Method and apparatus for efficient stenosis identification and assessment using MR imaging

DATE-ISSUED: May 25, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		
Saranathan; Manojkumar	Rockville	MD		

US-CL-CURRENT: 600/419; 324/300, 324/307, 382/128, 600/407, 600/410, 600/420

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[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [Claims](#) | [KINIC](#) | [Drawn D](#)

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**5. Document ID: US 6628980 B2**

L29: Entry 5 of 12

File: USPT

Sep 30, 2003

US-PAT-NO: 6628980  
DOCUMENT-IDENTIFIER: US 6628980 B2

TITLE: Apparatus, systems, and methods for in vivo magnetic resonance imaging

DATE-ISSUED: September 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Atalar; Ergin	Columbia	MD		
Bottomley; Paul A.	Columbia	MD		
Karmarkar; Parag	Elliott City	MD		
Lardo; Albert C.	Baldwin	MD		
Zerhouni; Elias	Pasadena	MD		

US-CL-CURRENT: 600/423; 324/318

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [RWC](#) | [Drawn Dc](#)

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6. Document ID: US 6408201 B1

L29: Entry 6 of 12

File: USPT

Jun 18, 2002

US-PAT-NO: 6408201

DOCUMENT-IDENTIFIER: US 6408201 B1

TITLE: Method and apparatus for efficient stenosis identification in peripheral arterial vasculature using MR imaging

DATE-ISSUED: June 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
Ho; Vincent B.	North Bethesda	MD		

US-CL-CURRENT: 600/410; 324/300, 324/307, 382/128, 600/419, 600/420

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Claims](#) | [RWC](#) | [Drawn Dc](#)

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7. Document ID: US 6289232 B1

L29: Entry 7 of 12

File: USPT

Sep 11, 2001

US-PAT-NO: 6289232

DOCUMENT-IDENTIFIER: US 6289232 B1

TITLE: Coil array autocalibration MR imaging

DATE-ISSUED: September 11, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jakob; Peter M.	Brookline Village	MA		
Sodickson; Daniel K.	Cambridge	MA		
Griswold; Mark	Brookline	MA		

US-CL-CURRENT: 600/410; 324/307, 324/309, 324/318, 324/322, 600/422

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	Publ.	Drawn	Des.
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 8. Document ID: US 6178346 B1

L29: Entry 8 of 12

File: USPT

Jan 23, 2001

US-PAT-NO: 6178346

DOCUMENT-IDENTIFIER: US 6178346 B1

TITLE: Infrared endoscopic imaging in a liquid with suspended particles: method and apparatus

DATE-ISSUED: January 23, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Amundson; David C.	Boulder	CO	80302	
Hanlin; H. John	Louisville	CO	80027	

US-CL-CURRENT: 600/473; 348/77, 600/160, 600/342

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	Publ.	Drawn	Des.
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 9. Document ID: US 6067465 A

L29: Entry 9 of 12

File: USPT

May 23, 2000

US-PAT-NO: 6067465

DOCUMENT-IDENTIFIER: US 6067465 A

\*\* See image for Certificate of Correction \*\*TITLE: System and method for detecting and tracking reference position changes with linear phase shift in magnetic resonance imaging

DATE-ISSUED: May 23, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foo; Thomas K. F.	Rockville	MD		
King; Kevin F.	Megnon	WI		

US-CL-CURRENT: 600/410; 324/309

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KM/C	Draw	De
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10. Document ID: US 5910728 A

L29: Entry 10 of 12

File: USPT

Jun 8, 1999

US-PAT-NO: 5910728

DOCUMENT-IDENTIFIER: US 5910728 A

TITLE: Simultaneous acquisition of spatial harmonics (SMASH): ultra-fast imaging with radiofrequency coil arrays

DATE-ISSUED: June 8, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sodickson; Daniel Kevin	Cambridge	MA		

US-CL-CURRENT: 324/309

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KM/C	Draw	De
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11. Document ID: EP 1391746 A2

L29: Entry 11 of 12

File: EPAB

Feb 25, 2004

PUB-NO: EP001391746A2

DOCUMENT-IDENTIFIER: EP 1391746 A2

TITLE: Parallel magnetic resonance imaging using navigator echos

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KM/C	Draw	De
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12. Document ID: CN 1487305 A, EP 1391746 A2, US 20040039276 A1, JP 2004073538 A, KR 2004017777 A

L29: Entry 12 of 12

File: DWPI

Apr 7, 2004

DERWENT-ACC-NO: 2004-182325

DERWENT-WEEK: 200441

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TITLE: Magnetic resonance imaging (MRI) apparatus for parallel imaging of subject has post-image producing device, which forms image with full field-of-view based on produced intermediate image and phase-corrected sensitivity matrix

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KM/C	Draw	De
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Term	Documents
PHASE	1764874
PHASES	355775
PHASING	21040
PHASINGS	231
PHASED	37894
PHASEDS	0
(28 AND (PHASING OR PHASED OR PHASE)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	12
(L28 AND (PHASE OR PHASING OR PHASED) ).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	12

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